

REMARKS

Formal Matters

Claims 1, 2 and 4-33, as well as new claims 34-36, are pending.

Claims 1, 2 and 4-33 were examined. Claims 1, 2, 4-16 and 18-33 were rejected and claim 17 was objected to.

Claims 1, 9, 12, 14, 21, 24 and 27 are amended for clarity and claims 34-36 are new. The amendments to the claims were made solely in the interest of expediting prosecution, and are not to be construed as an acquiescence to any objection or rejection. Support for the amendments to the claims is found in the claims as originally filed, and throughout the specification, in particular at the following exemplary locations: page 9, lines 24-26.

Support for new claims 34, 35 and 36 may be found in claims 14, 17 and 1, respectively, and support for "biopolymer" may be found on page 6, lines 4-12 and page 6, line 31-page 7, line 2.

Accordingly, no new matter is added.

New claims 34 - 36

Claims 34-36 are new. Because these claims recite first and second drop dispensers that are loaded with the same fluid, and the second drop dispenser is used to dispense a path of droplets if the first drop dispenser is in error, the Applicants respectfully submit that these claims, like the rest of the pending claims, are free of the art and are patentable.

Accordingly, an allowance is respectfully requested for new claims 34-36.

Drawings

The Office Action requests substitute drawings.

Substitute drawings were submitted on August 25, 2003.

Accordingly, no substitute drawings are filed with this response since substitute drawings have already been filed.

Claim objections

The claim objections set forth in this Office Action have been addressed in the amendment filed on August 25, 2003.

Claim rejections under 35 U.S.C. § 112, second paragraph

Claims 1-29 are rejected for assertedly being indefinite.

Claims 1, 14, and 27 are rejected for reciting the limitation “each group comprises a series of drop dispensers within the group loaded with the same fluid” because it is assertedly unclear whether more than one of the drop dispensers are loaded with the same fluid.

Without acquiescing to the correctness of this rejection, these claims have been amended to state “at least a first and a second drop dispenser loaded with a same fluid”. The claims are therefore clear in that at least two drop dispensers are loaded with the same fluid.

Accordingly, the Applicants respectfully submit that the meaning of the claims is now clear.

In view of the foregoing discussion, this rejection may be withdrawn.

Claims 9, 12, 21 and 24 are rejected for reciting “each column of each group of dispensers of a same column within a group are loaded with the same fluid”, again, because it is assertedly unclear whether more than one of the drop dispensers are loaded with the same fluid.

Without acquiescing to the correctness of this rejection, these claims have been amended to state “at least two dispensers of a same column within a group are loaded with a same fluid”. The claims are therefore clear in that at least two drop dispensers of each group are loaded with the same fluid.

Accordingly, the Applicants respectfully submit that the meaning of the claims is now clear.

In view of the foregoing discussion, this rejection may be withdrawn.

Claim 12 is rejected for reciting the phrases “that column” and “a same column in that group”, because the phrases assertedly lack antecedent basis.

Without acquiescing to the correctness of this rejection, this claim has been amended to remove both of these phrases.

The Applicants respectfully submit that the meaning of claim 12 is now clear and, accordingly, this rejection may be withdrawn.

Claim 24 is rejected for reciting the phrases “that column” and “a same column in that group”, because the phrases assertedly lack antecedent basis.

Without acquiescing to the correctness of this rejection, this claim has been amended to remove both of these phrases.

The Applicants respectfully submit that the meaning of claim 24 is now clear and, accordingly, this rejection may be withdrawn.

Claims 30-33 are rejected for reciting the phrase "features", because the Office does not know what is meant by the word.

The Applicants respectfully submit that the meaning of the word "feature" is well known to those of skill in the array arts. The word refers to an addressable position of a substrate onto which a sample, in this case a droplet, is deposited. Further, the term "feature" is specifically defined as having this meaning on page 7, lines 2-6 of the instant application.

Accordingly, in view of the fact that the word "feature" is an art-recognized term that is specifically defined in the instant specification, the Applicants respectfully submit that its meaning would be apparent to one of skill in the art.

Since no more is required to meet the requirements of the second paragraph of 35 U.S.C. § 112, this rejection may be withdrawn.

Claim rejections under 35 U.S.C. § 103

The claims are rejected under 35 U.S.C. § 103 as being unpatentable over Hermanson (U.S. 5,581,284), Hermanson in view of Hickman (U.S. 4,963,882) and Hubbard (U.S. 4,907,013) or Hermanson in view of Hickman and Gamble (U.S. 6,001,309). These rejections are respectfully traversed.

All of the rejected claims recite, as discussed above in the response to claim rejections under 35 U.S.C. § 112 ¶2, at least two drop dispensers that are loaded with the **same** fluid. Accordingly, the instant claims are directed to methods and compositions in which an error dispenser is detected and replaced by a non-error dispenser that dispenses the **same** fluid as the error dispenser. For example, claim 1 recites a first and a second drop dispenser loaded with a same fluid, and dispensing drops from the second drop dispenser if the first drop dispenser is in error.

Prior art rendering the instant claims obvious must therefore disclose, teach, or fairly suggest replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser.

The primary reference used to establish each of the above rejections is Hermanson.

Hermanson discloses a means for extending the life of a printbar such as a black ink printbar in a multi-color printbar by substituting a defective nozzle with another printbar nozzle carrying a different color ink (column 2, lines 15-20). For example, cyan, magenta and/or yellow are used to substitute for black, or black may be used to fill in for missing cyan or magenta droplets (col. 2, lines 22-28). At no point does Hermanson mention substituting a nozzle with another nozzle carrying a same color ink.

Accordingly, Hermanson is deficient in that it fails to disclose, teach or fairly suggest an element of the claimed invention, i.e., replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser.

Hickman is cited for providing a system for transporting a print head. Hickman's transport system fails to provide a system for replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser, and, accordingly, Hickman fails to meet Hermanson's deficiency.

Hubbard is cited for providing a method of "stepping" a printhead to compensate for a malfunctioned dispenser. Hubbard's method fails to provide a system for replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser, and, accordingly, Hubbard fails to meet Hermanson's deficiency.

Gamble is cited for disclosing pulse jet dispensers for delivering small volumes of solutions onto a substrate. Gamble's pulse jet dispensers fail to provide a system for replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser, and, accordingly, Gamble fails to meet Hermanson's deficiency.

Accordingly, Hermanson, Hickman, Hubbard and Gamble, taken alone or in any combination, fail to teach at least one element of the claimed invention, i.e., replacing an error dispenser with a non-error dispenser that dispenses the same fluid as the error dispenser. Since the cited references fail to teach an element of the rejected claims, this rejection may be withdrawn.

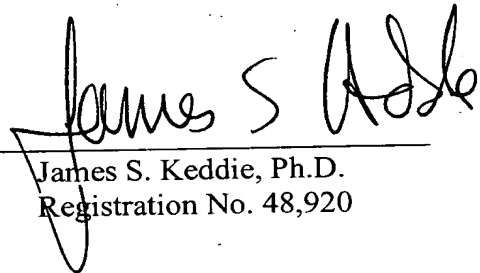
The Applicants respectfully submit that new claims 34-36 are also patentable over these references for the same reasons.

CONCLUSION

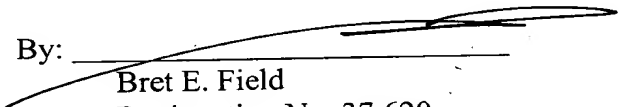
The Applicants respectfully submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone Gordon Stewart at (650) 485 2386. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078.

Respectfully submitted,

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